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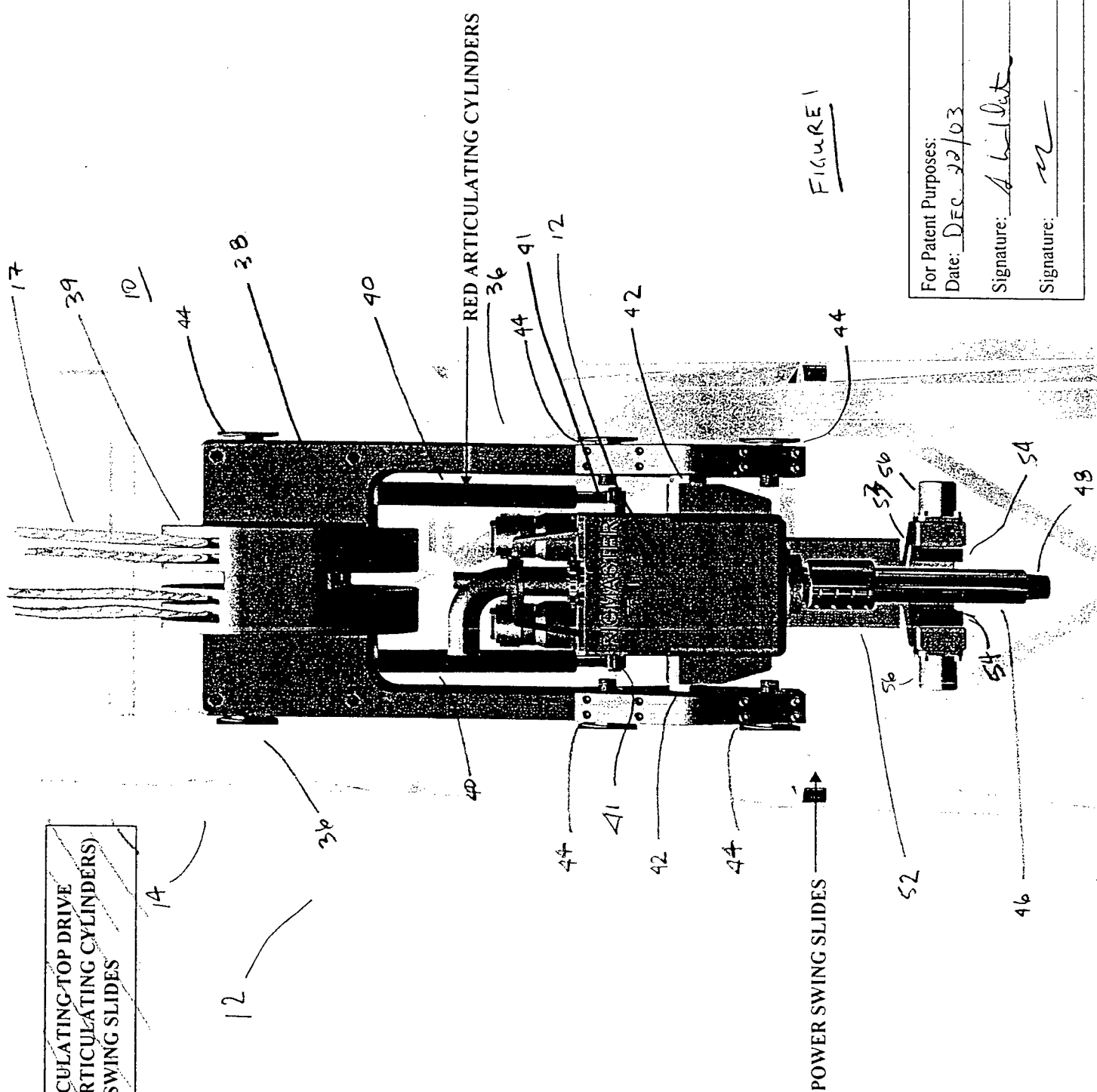


FIGURE 1

POWER ARTICULATING-TOP DRIVE
 (NOTE RED-ARTICULATING CYLINDERS)
 AND POWER SWING SLIDES

For Patent Purposes:
 Date: DEC 22/03
 Signature: *[Signature]*
 Signature: *[Signature]*

NOVEMBER 2003

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DRILL PIPE ROLLING FROM THE PIPE TUB TO
THE "PIPE LAUNCHER"

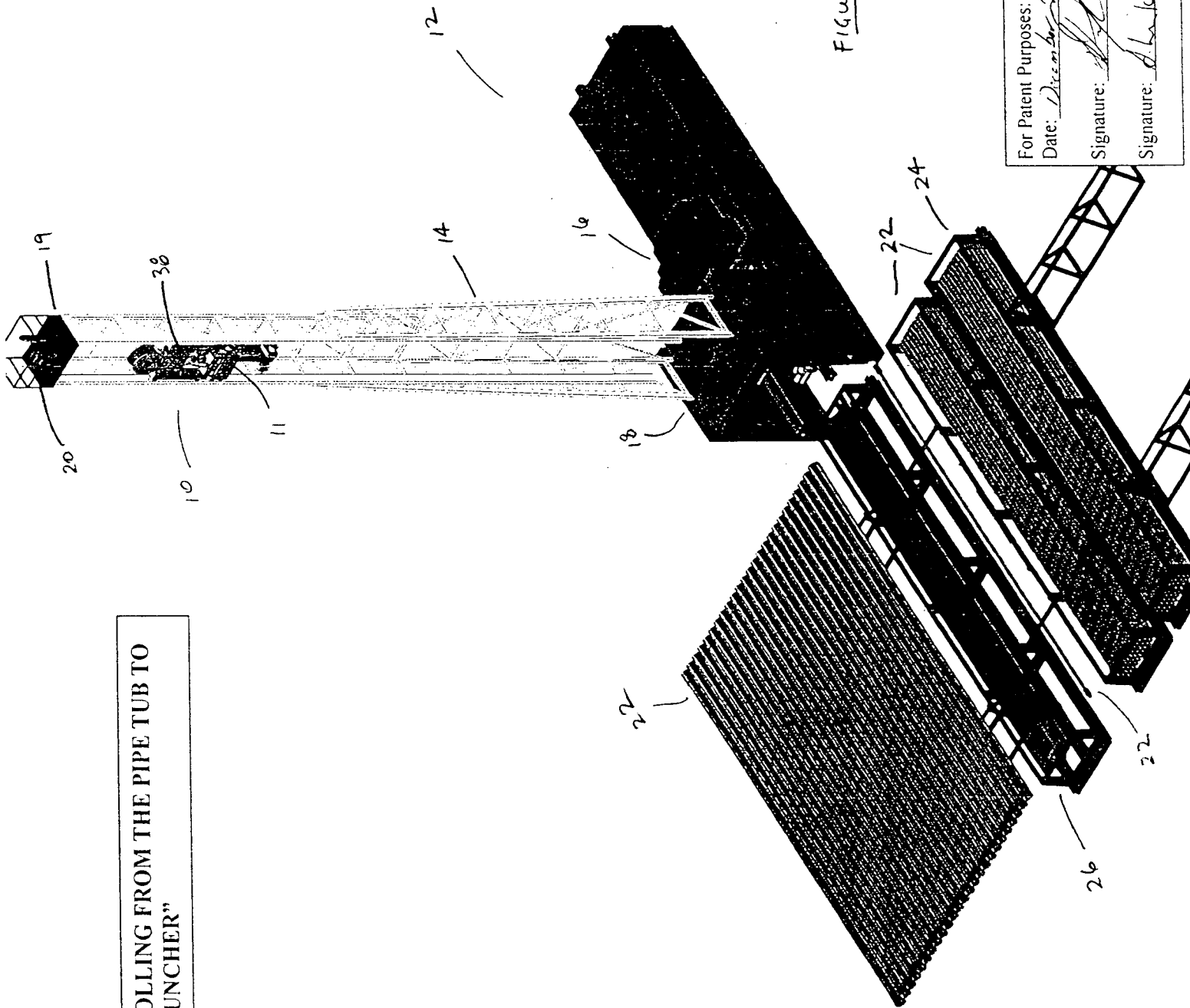


FIGURE 2

For Patent Purposes:

Date: December 2, 2002

Signature: [Signature]

Signature: [Signature]

PIPE IN LAUNCHER READY FOR ALIGNMENT
TO DESCENDING ARTICULATING TOP DRIVE

For Patent Purposes:

Date: Dec. 22/03

Signature: *AL*

Signature: *M*



Figure 3

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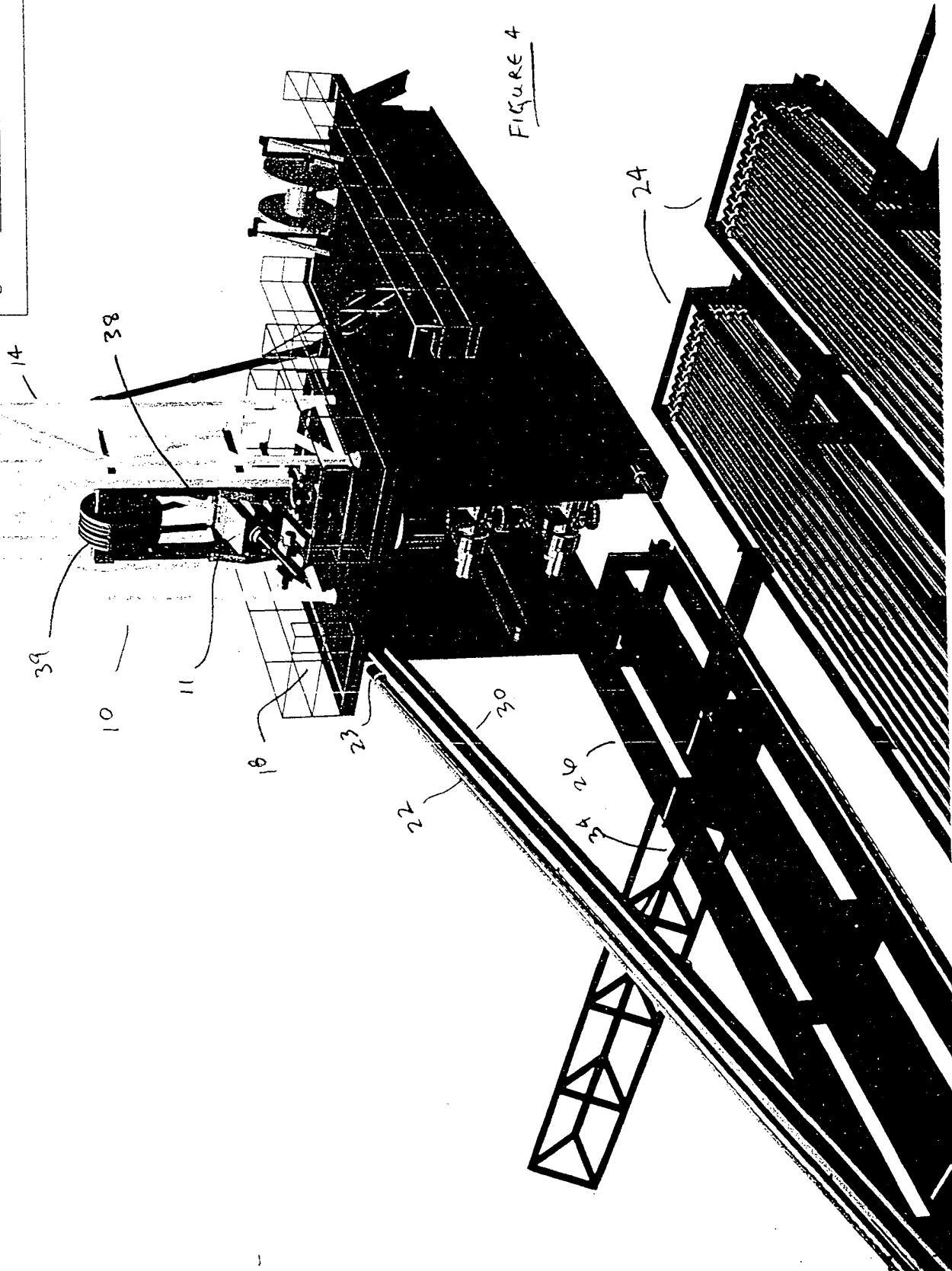
PIPE ALIGNMENT READY FOR PIPE LAUNCHER
TO POSITION PIPE IN TARGET ZONE

For Patent Purposes:

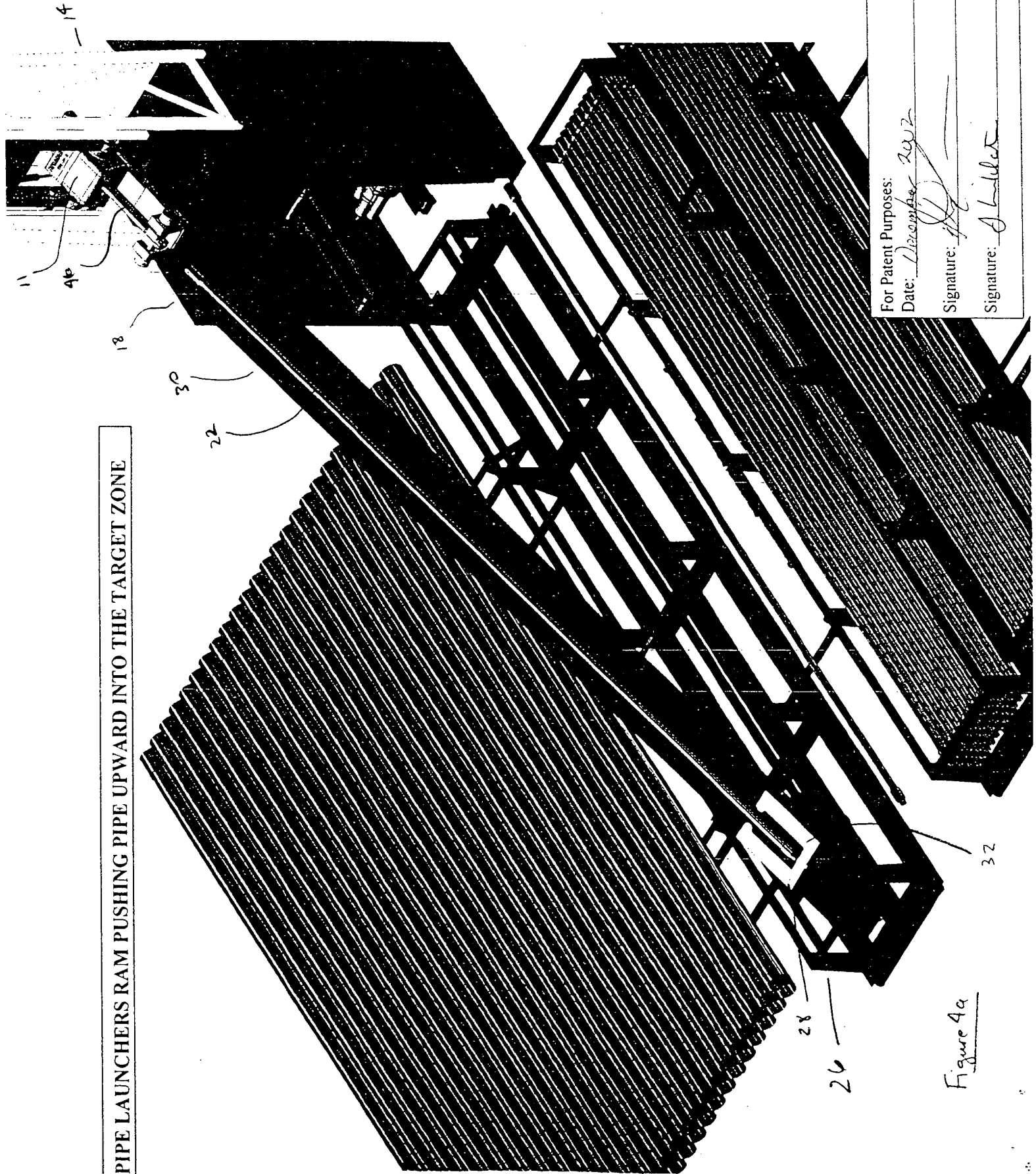
Date: Dec 22/03

Signature: A. H. H. H.

Signature: M



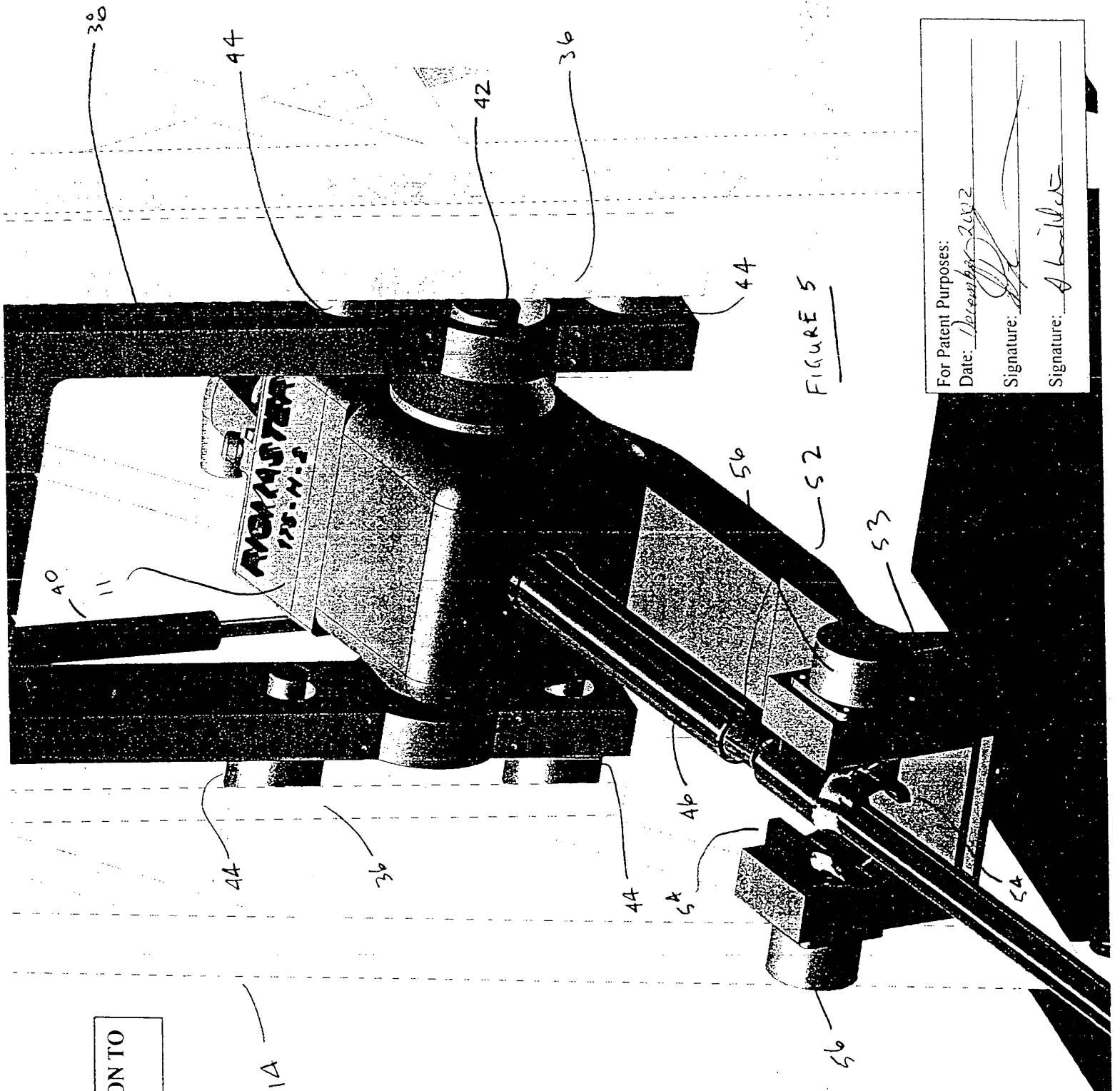
PIPE LAUNCHERS RAM PUSHING PIPE UPWARD INTO THE TARGET ZONE



For Patent Purposes:
Date: December 29, 2012
Signature: [Signature]
Signature: J. H. H. H.

Figure 4a

TOP DRIVE IN POSITION TO
GRIP TUBULAR



For Patent Purposes:

Date: December 2002

Signature: *[Signature]*

Signature: *[Signature]*

GRIPPER IN ACTION, CLAMPED TO
TOOL JOINT, READY TO SLIDE UPWARD
TO MEET THE SLOWLY ROTATING TOP
DRIVE QUILL



FIGURE 6 22

For Patent Purposes:

Date: DEC. 22/03

Signature: *A. L. Lister*

Signature: *m*

CONNECTION COMPLETED, GRIPPER
REMAINS LOCKED ON FOR HOISTING



FIGURE 7 12

For Patent Purposes:

Date: DEC 22/03

Signature: *Alldate*

Signature: *M*

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GOING UP, DRAGGING THE PIPE WITH
THE TOP DRIVE ARTICULATING RAMS
SET TO THE FLOAT POSITION



14

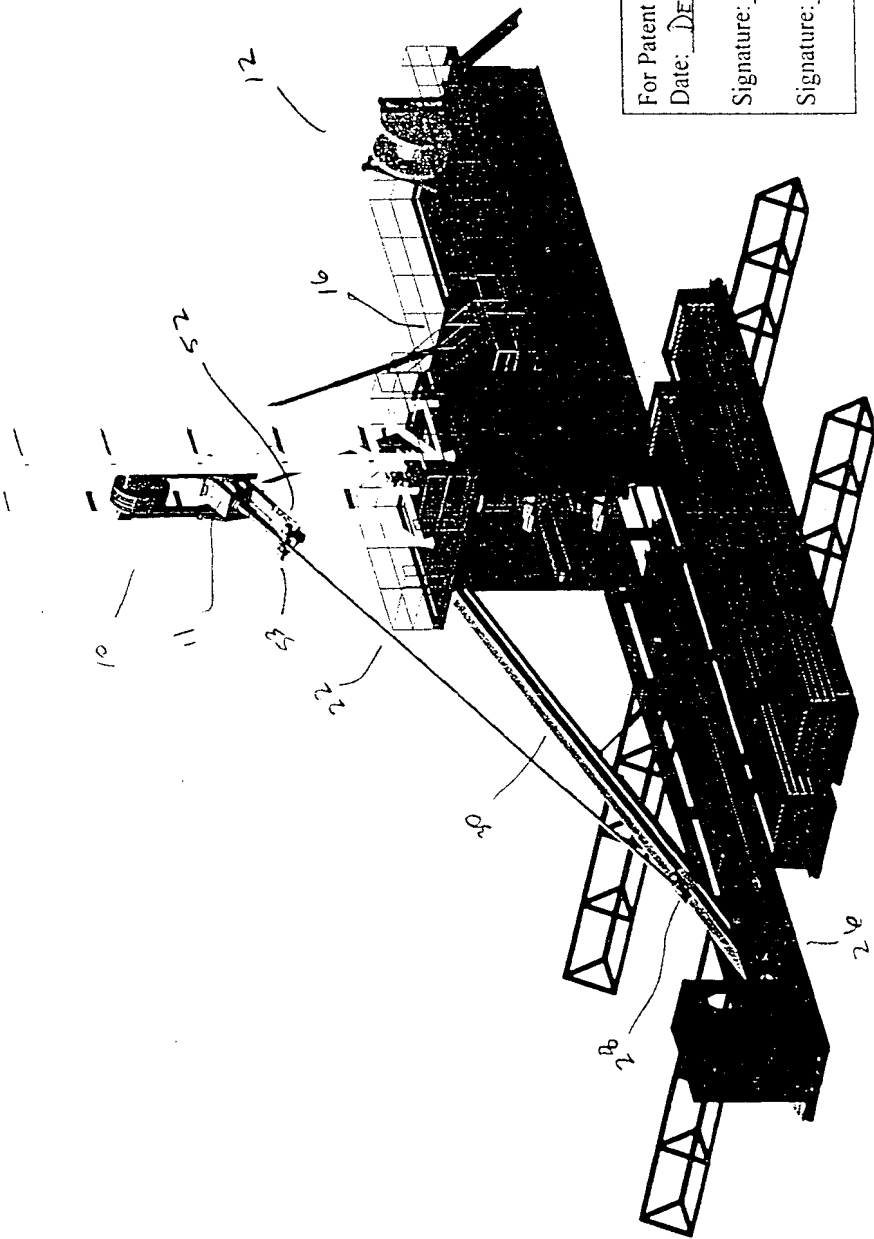


FIGURE 8

For Patent Purposes:	
Date: DEC 22/03	
Signature: A. Wilder	
Signature: M	

DRILL PIPE READY TO BREAK FREE OF THE DOLLY AND SWING GENTLY INTO THE VERTICAL POSITION

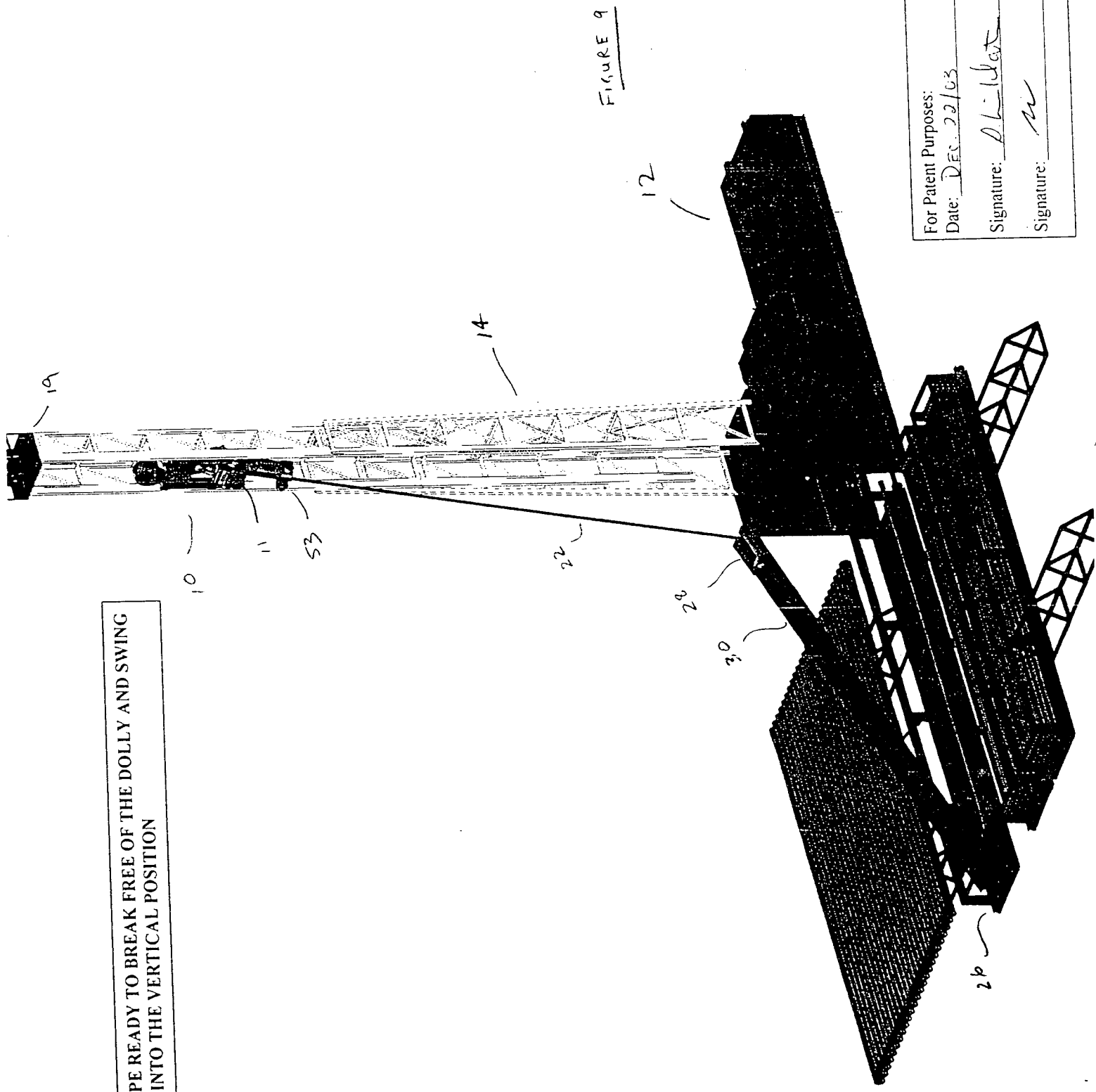


FIGURE 9

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 Date: DEC. 22/03
 Signature: *DLI*
 Signature: *W*

DRILL PIPE IN DRILLING POSITION, GRIPPER RELEASED

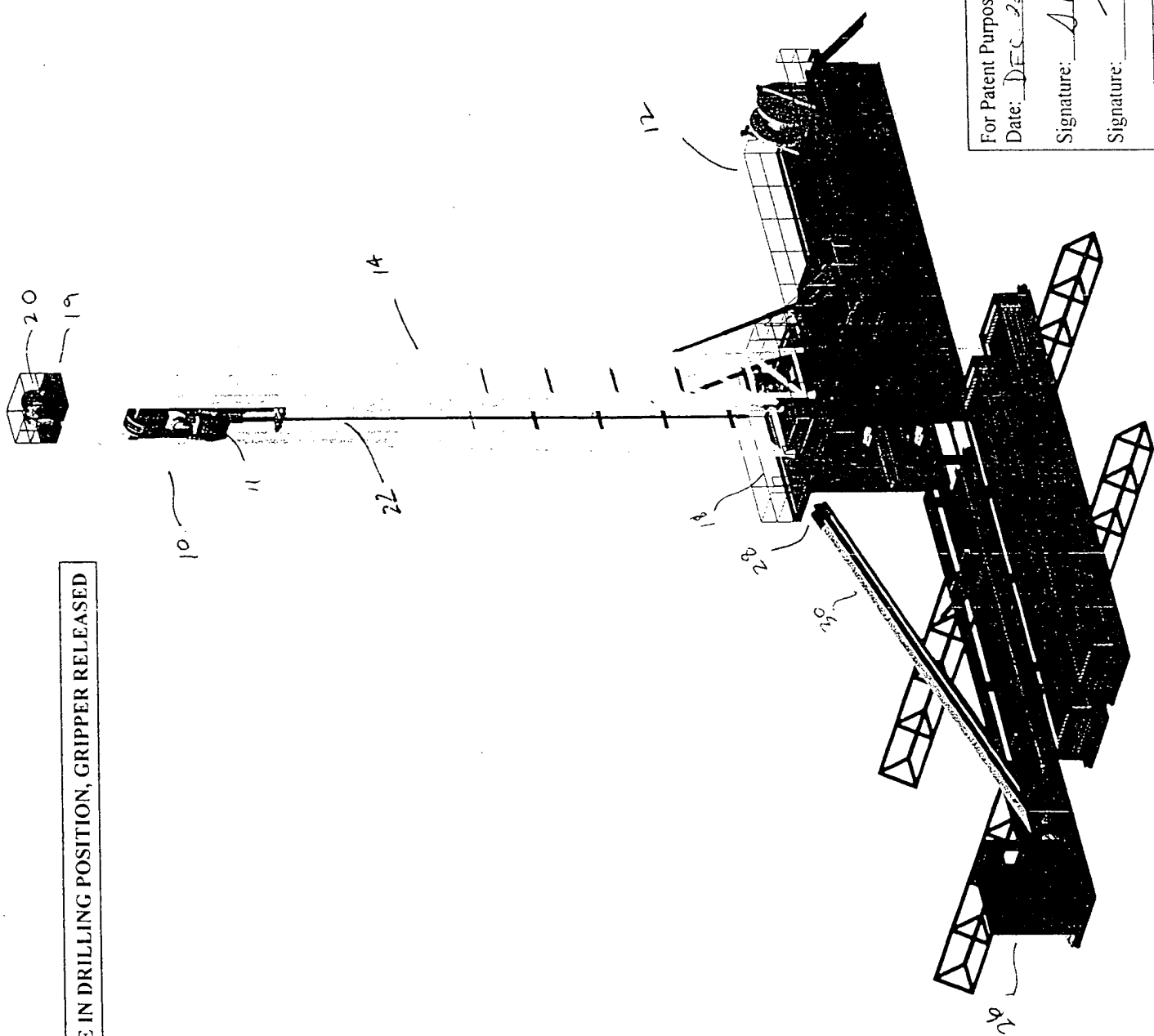


FIGURE 10

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Date: DEC 22/03
Signature: *Shelton*
Signature: *m*

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COMING OUT OF THE HOLE TO LAY DOWN, OR
TRIP

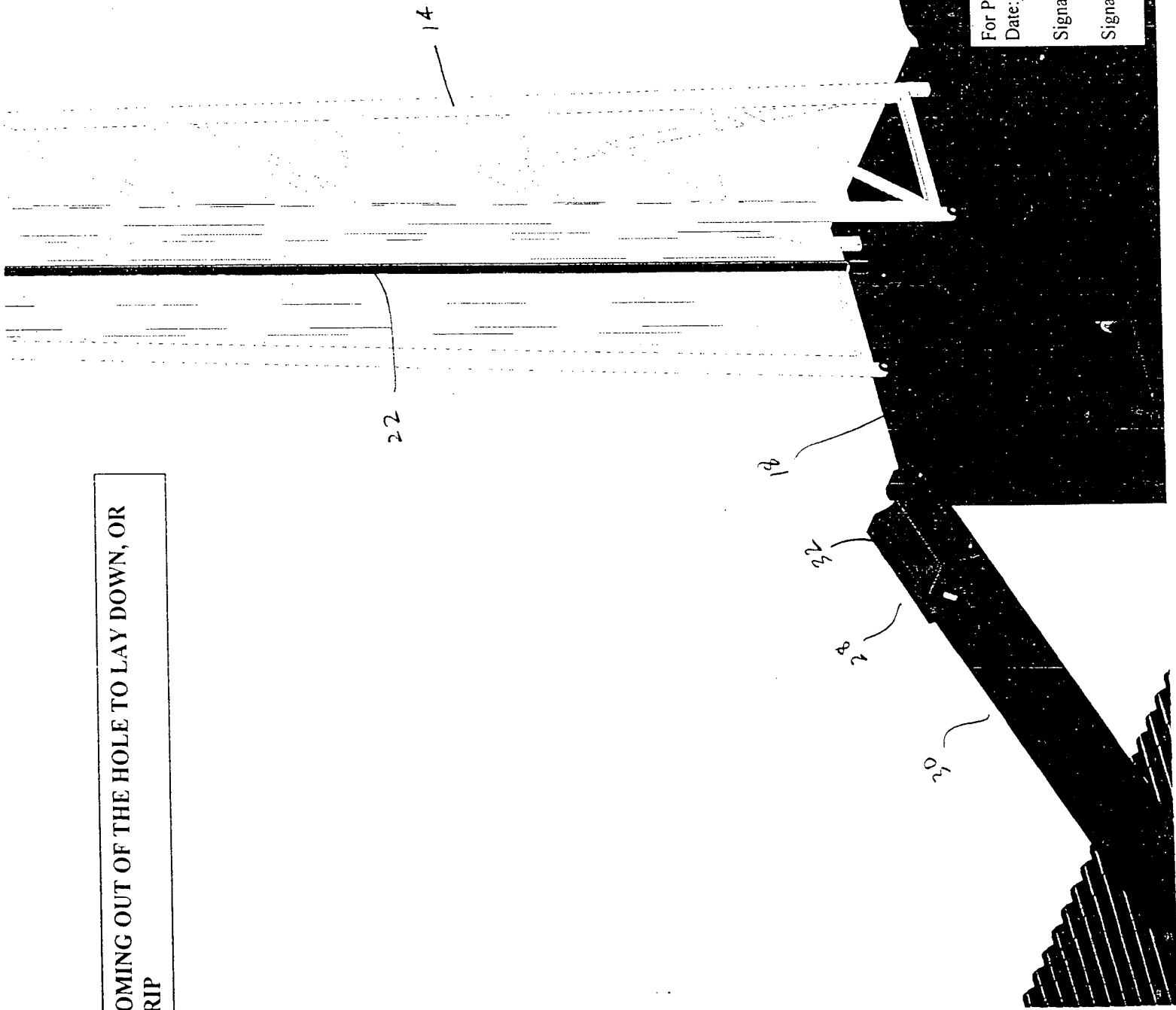


FIGURE 11

For Patent Purposes:

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Signature: [Signature]

Signature: [Signature]

TOP DRIVE ARTICULATING SLIGHTLY TO ALLOW TAGGING
OF CART IN PREPARING TO LAY PIPE DOWN



For Patent Purposes:

Date: DEC 22/03

Signature: *A. L. Wata*

Signature: *W*

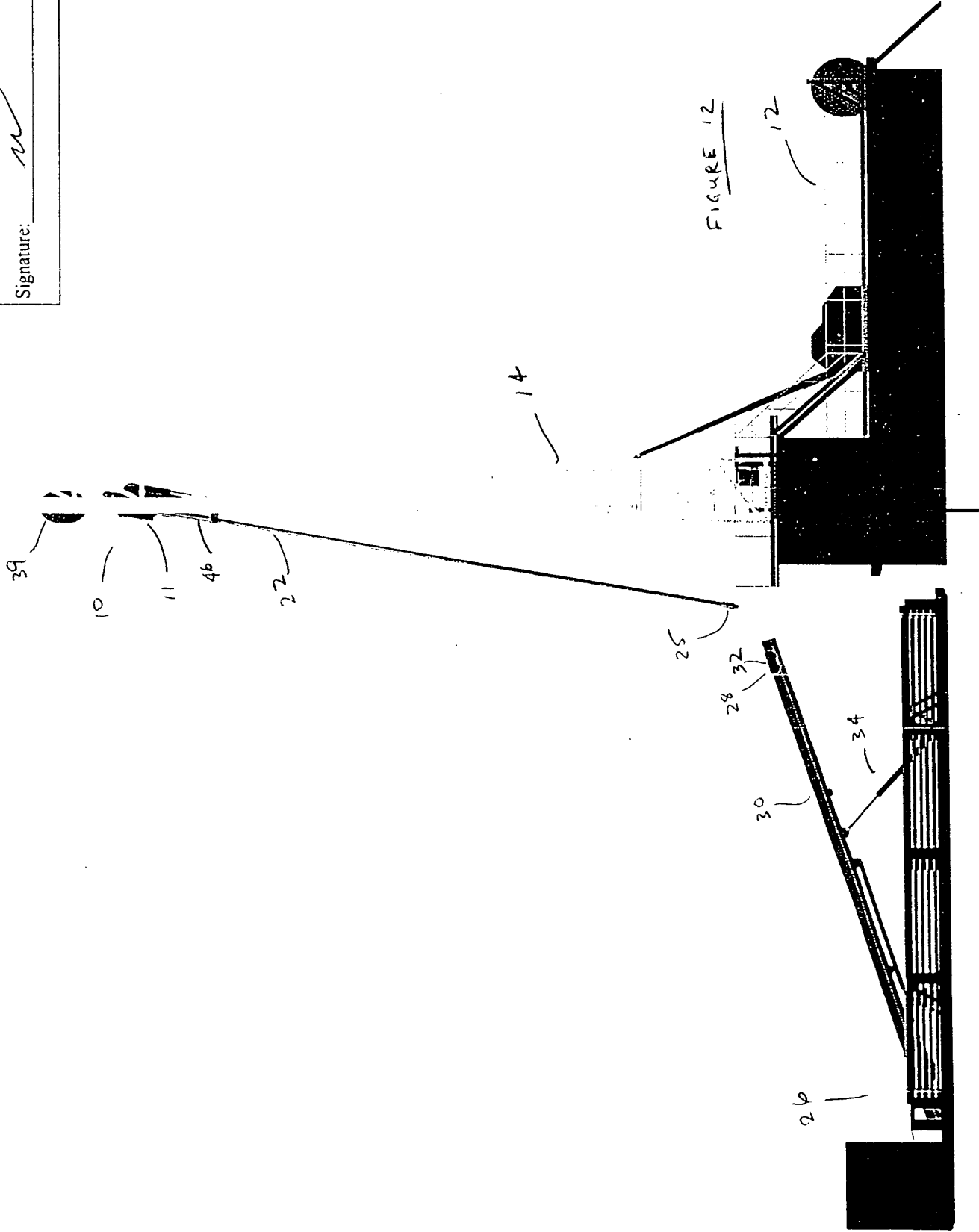


FIGURE 12

TOP DRIVE ARTICULATED TO SWING PIPE ONTO
THE DOLLY

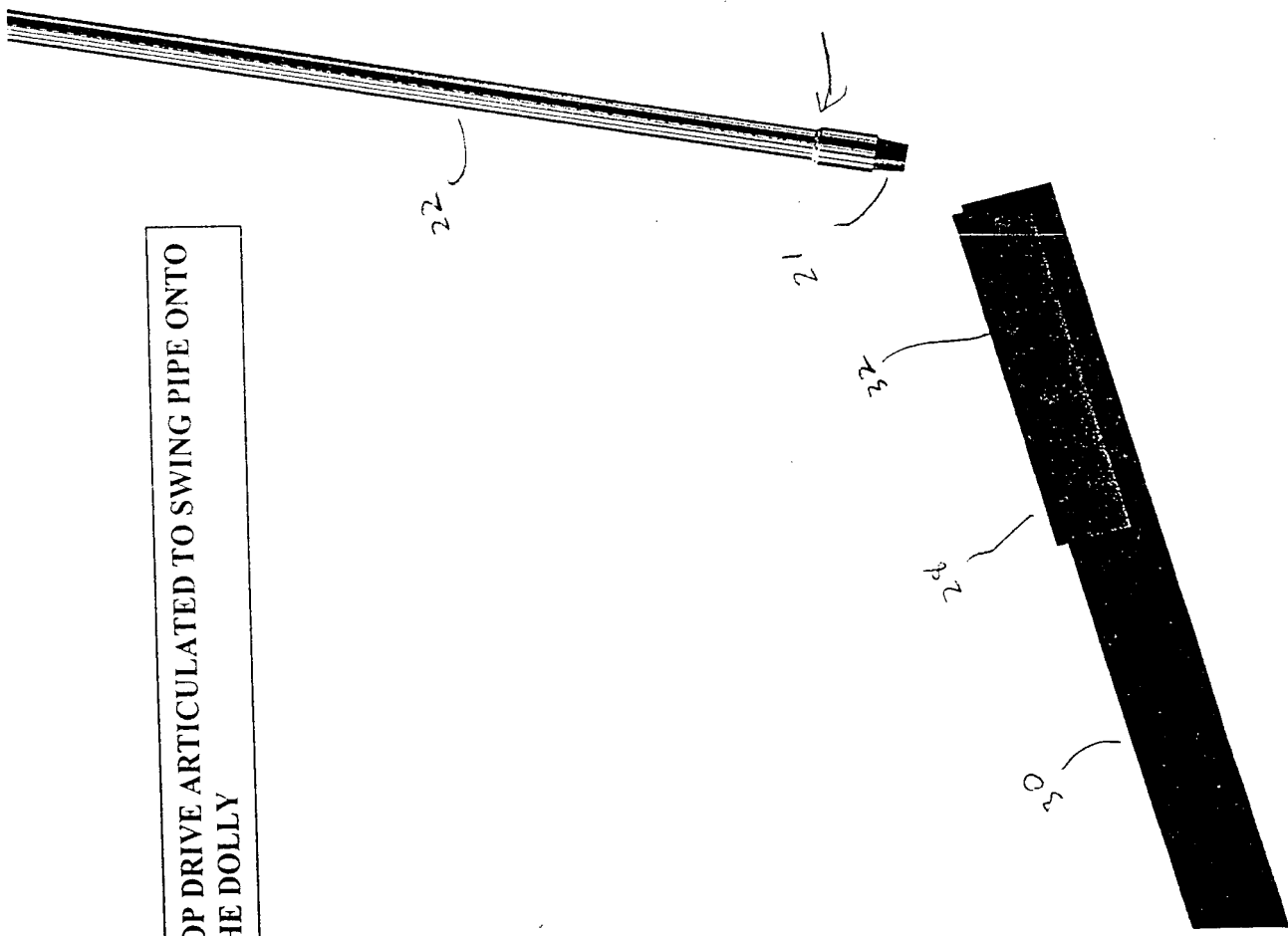
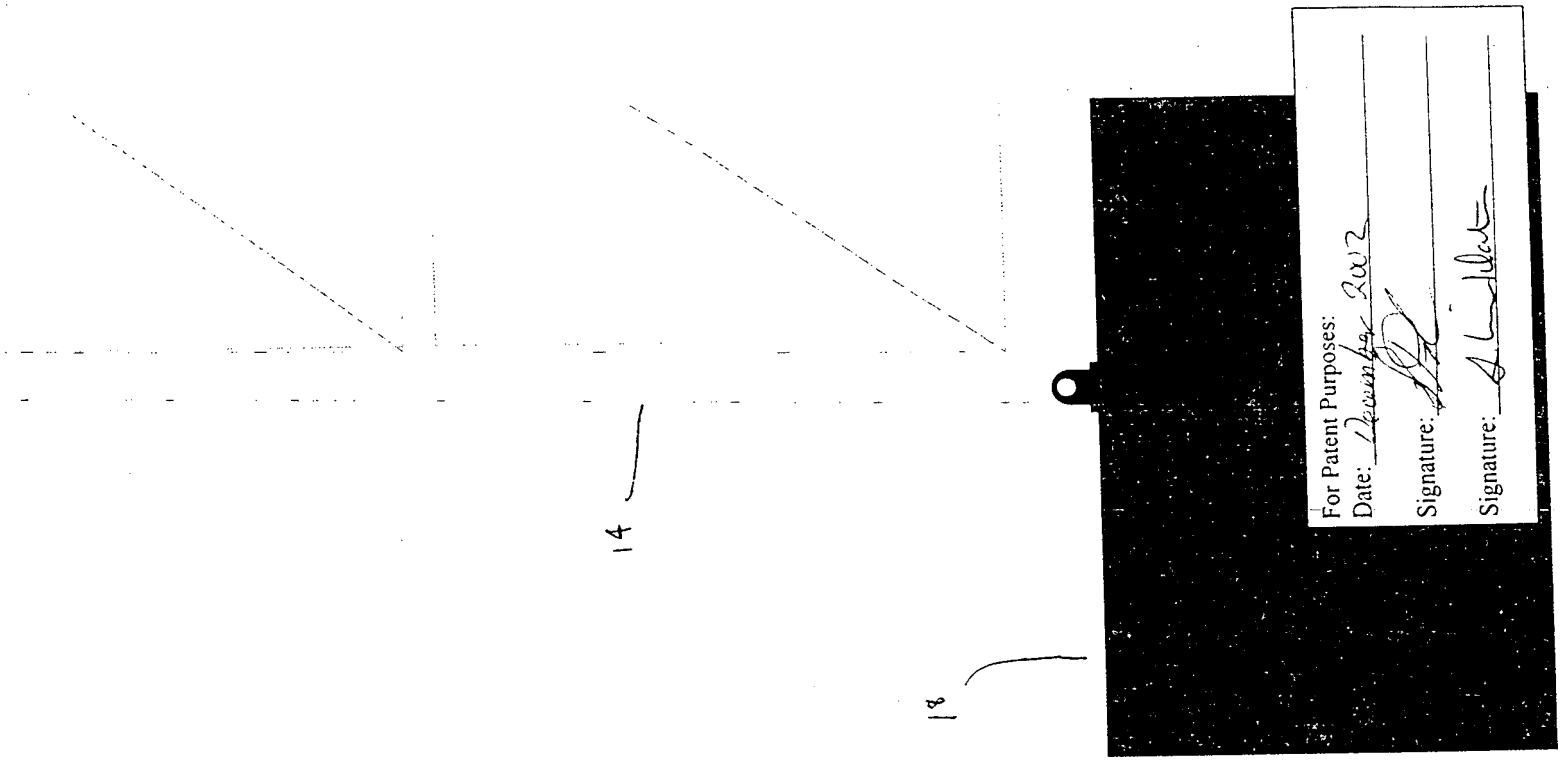
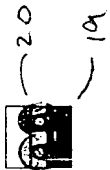


FIGURE 13



For Patent Purposes:
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Signature: [Signature]
Signature: [Signature]

ARTICULATING RAMS ON TOP DRIVE IN
 FLOAT POSITION, DRAWWORKS BRAKE
 HANDLE RAISED ALLOWING PIPE AND
 TOP DRIVE ASSEMBLY TO DESCEND TO
 LAUNCHER ANGLE



For Patent Purposes:
 Date: DEC. 22/03
 Signature: D. White
 Signature: W

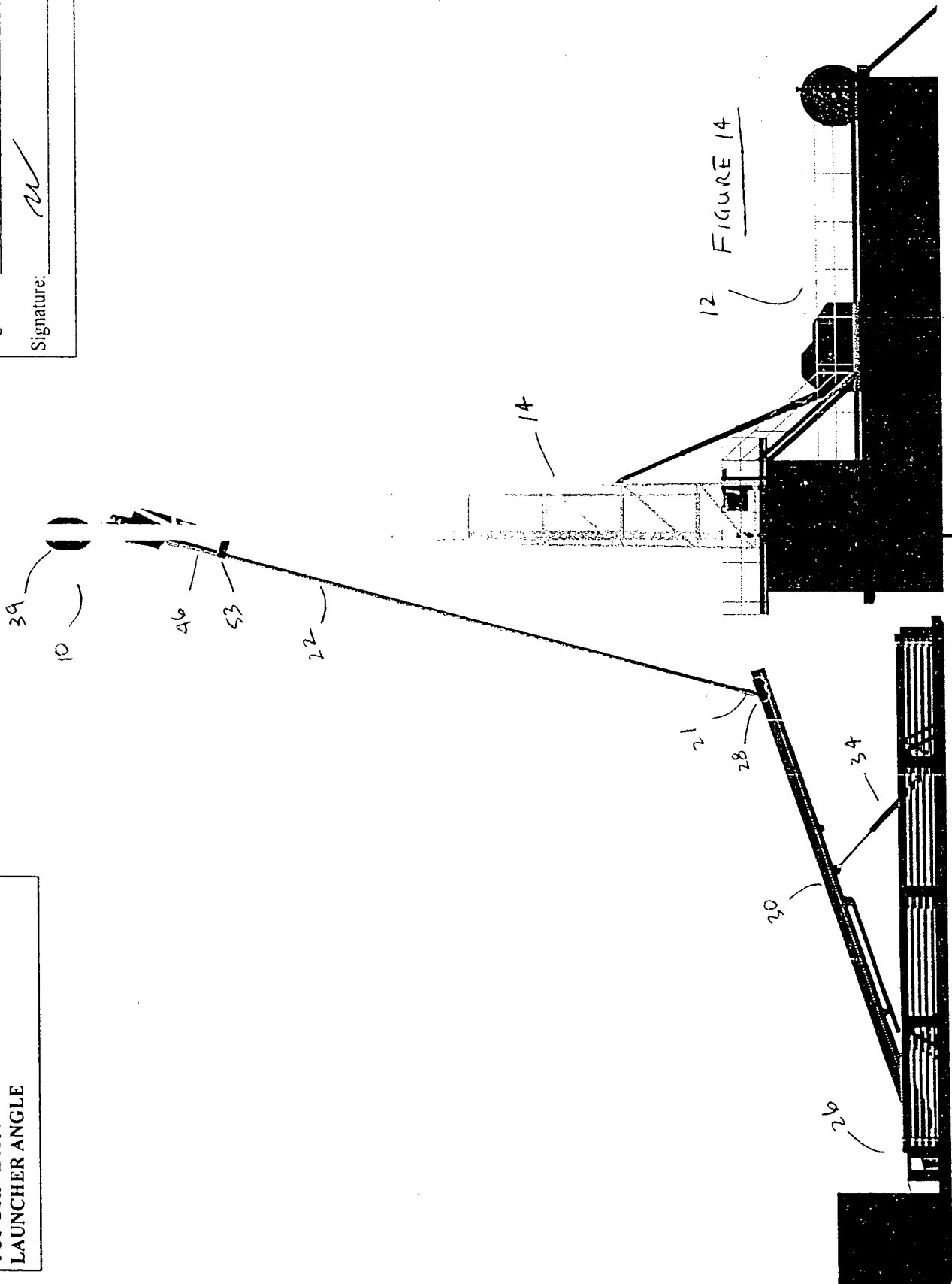


FIGURE 14

BRAKE HANDLE UP TO SET PIPE IN
DOLLY IN PREP TO LAY DOWN

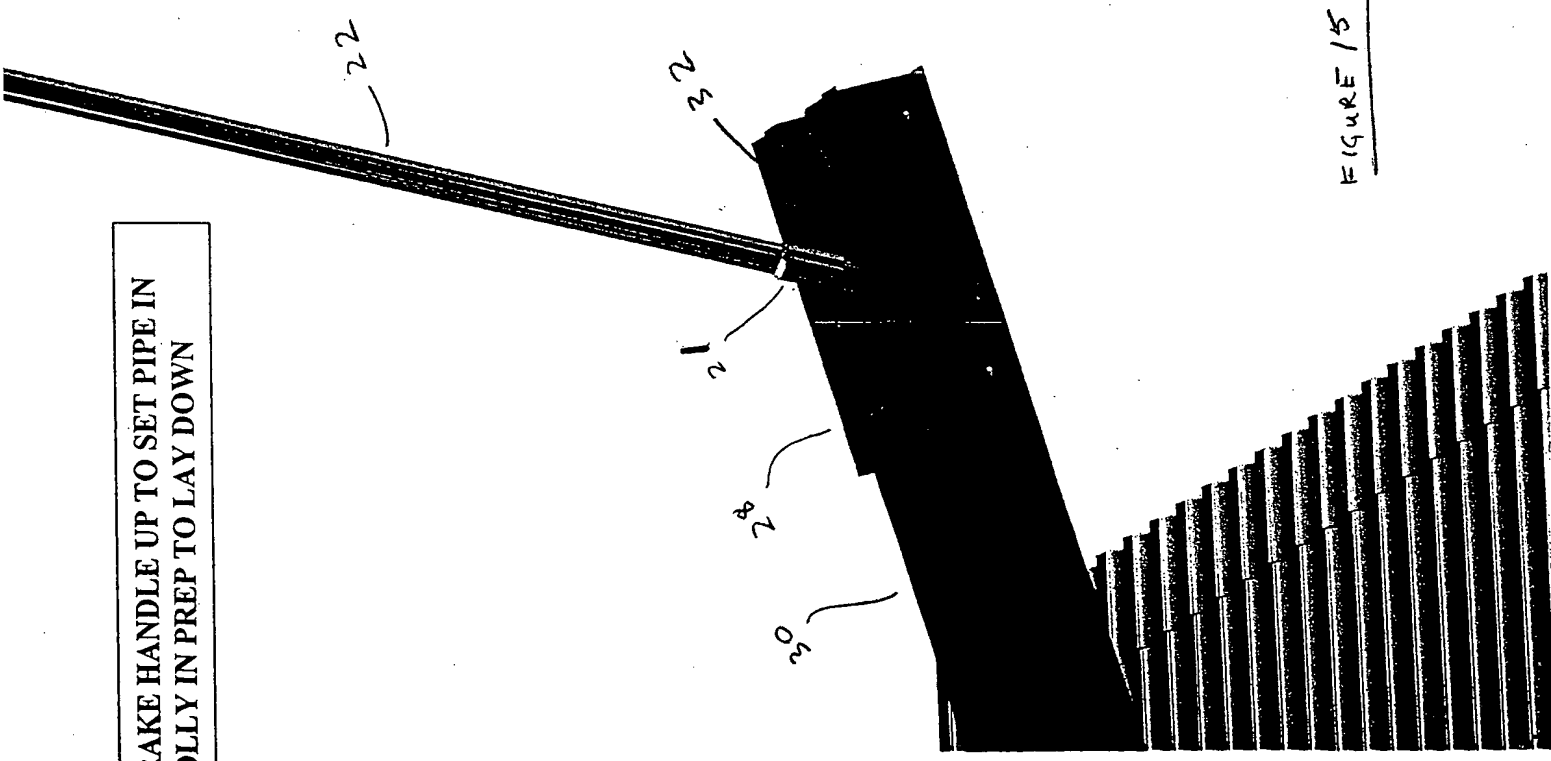
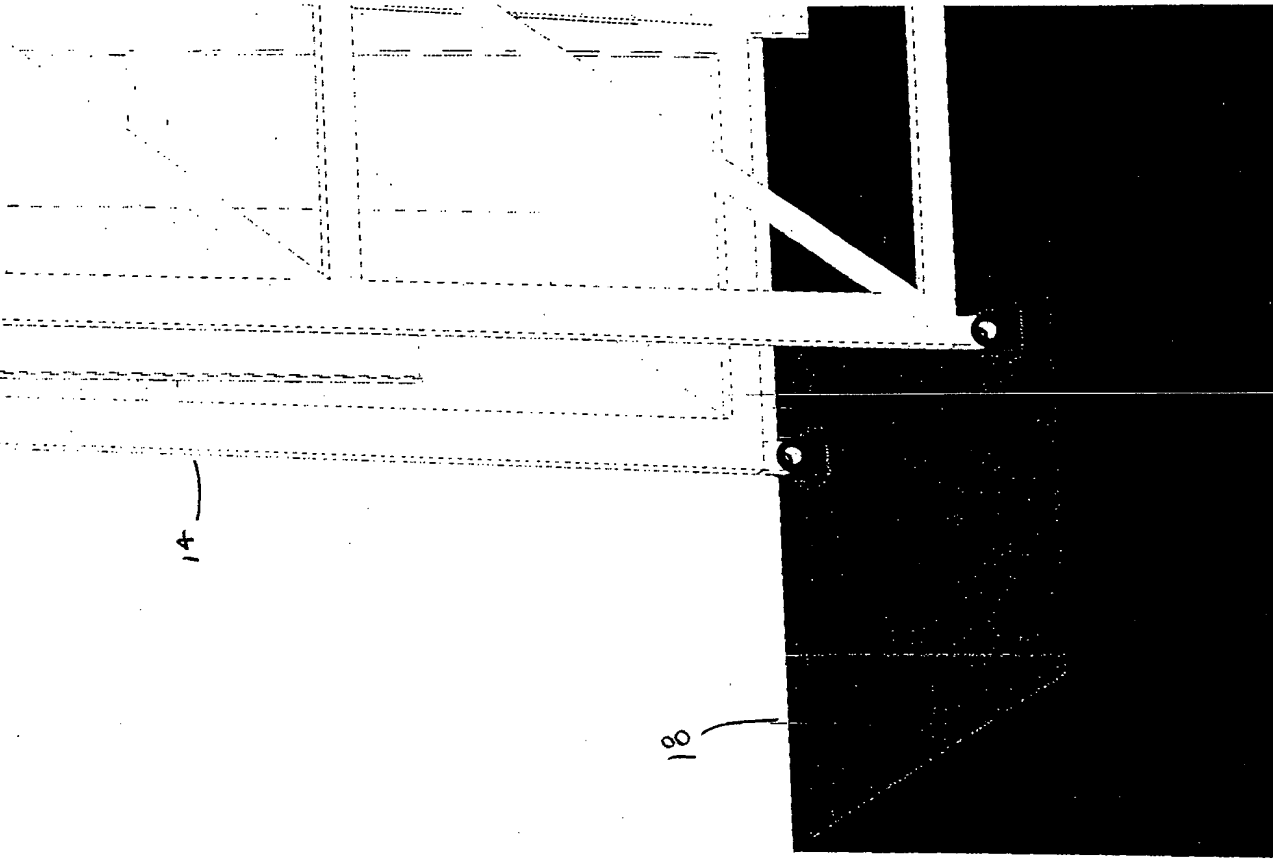


FIGURE 15



For Patent Purposes:
Date: December 2002
Signature: [Signature]
Signature: [Signature]

PIPE DESCENDING...

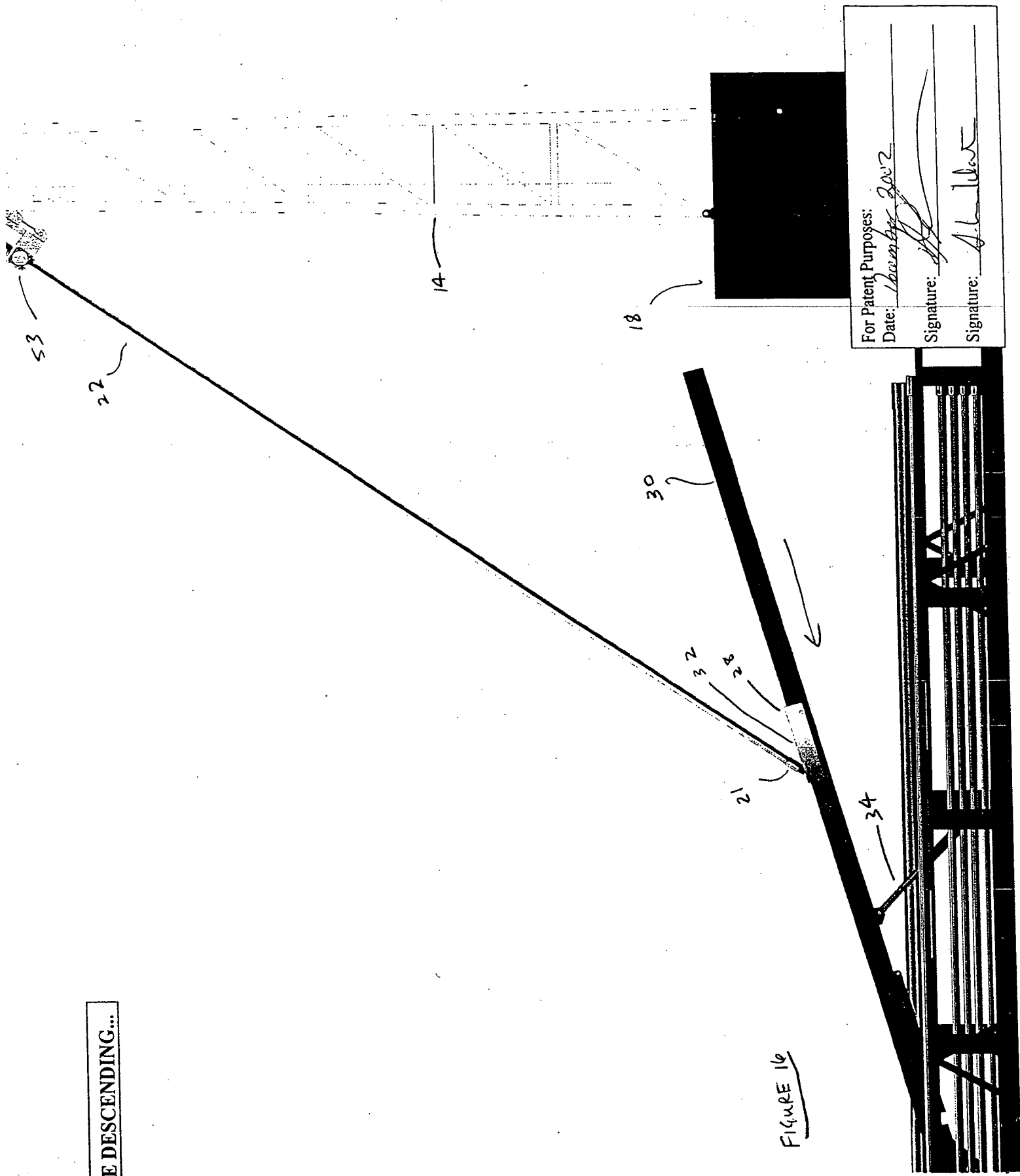
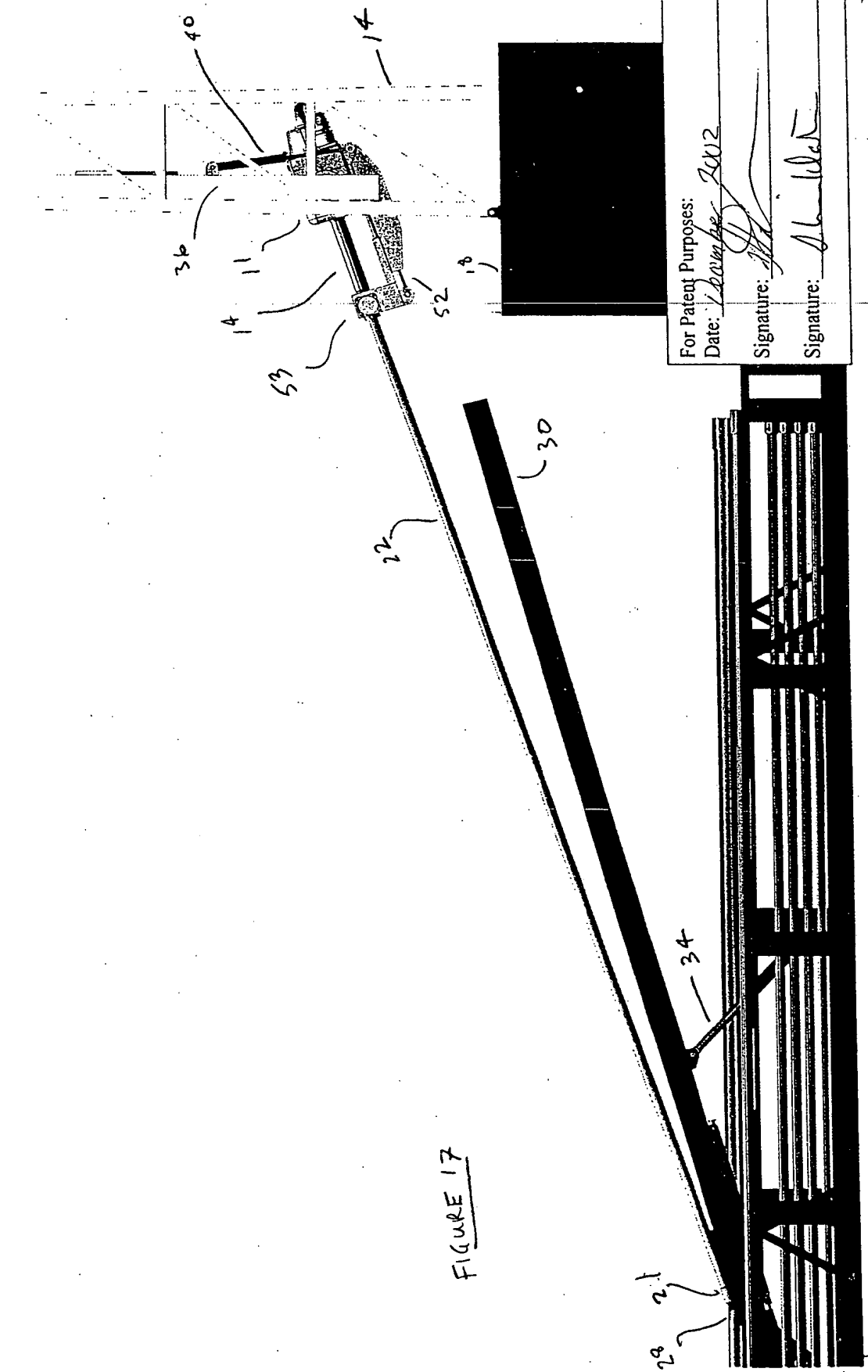


FIGURE 16

PIPE BEING LOWERED ONTO PIPE LAUNCHER TROUGH FOR
PLACEMENT BACK INTO TUBS OR RACKS



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 Signature: [Signature]

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